

## SEQUENCE LISTING

&lt;110&gt; NeuTec Pharma plc

&lt;120&gt; Medicament

&lt;130&gt; M99/0035/PCT

&lt;140&gt;

&lt;141&gt;

&lt;150&gt; GB9902555.3

&lt;151&gt; 1999-02-05

&lt;160&gt; 16

&lt;170&gt; PatentIn Ver. 2.1

&lt;210&gt; 1

&lt;211&gt; 1491

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(1491)

&lt;400&gt; 1

gat	aca	aac	atg	tct	att	tca	tct	tct	tca	gga	cct	gac	aat	caa	aaa	48
Asp	Thr	Asn	Met	Ser	Ile	Ser	Ser	Ser	Ser	Gly	Pro	Asp	Asn	Gln	Lys	
1				5					10					15		

aat	atc	atg	tct	caa	gtt	ctg	aca	tcg	aca	ccc	cag	ggc	gtg	ccc	caa	96
Asn	Ile	Met	Ser	Gln	Val	Leu	Thr	Ser	Thr	Pro	Gln	Gly	Val	Pro	Gln	
			20					25					30			

caa	gat	aag	ctg	tct	ggc	aac	gaa	acg	aag	caa	ata	cag	caa	aca	cgt	144
Gln	Asp	Lys	Leu	Ser	Gly	Asn	Glu	Thr	Lys	Gln	Ile	Gln	Gln	Thr	Arg	
		35					40					45				

cag	ggt	aaa	aac	act	gag	atg	gaa	agc	gat	gcc	act	att	gct	ggt	gct	192
Gln	Gly	Lys	Asn	Thr	Glu	Met	Glu	Ser	Asp	Ala	Thr	Ile	Ala	Gly	Ala	
	50					55					60					

tct	gga	aaa	gac	aaa	act	tcc	tcg	act	aca	aaa	aca	gaa	aca	gct	cca	240
Ser	Gly	Lys	Asp	Lys	Thr	Ser	Ser	Thr	Thr	Lys	Thr	Glu	Thr	Ala	Pro	
	65					70				75				80		

caa	cag	gga	gtt	gct	gct	ggg	aaa	gaa	tcc	tca	gaa	agt	caa	aag	gca	288
Gln	Gln	Gly	Val	Ala	Ala	Gly	Lys	Glu	Ser	Ser	Glu	Ser	Gln	Lys	Ala	
			85					90					95			

ggt	gct	gat	act	gga	gta	tca	gga	gcg	gct	gct	act	aca	gca	tca	aat	336
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09889314-12001

Gly Ala Asp Thr Gly Val Ser Gly Ala Ala Ala Thr Thr Ala Ser Asn  
 100 105 110  
 act gca aca aaa att gct atg cag acc tct att gaa gag gcg agc aaa 384  
 Thr Ala Thr Lys Ile Ala Met Gln Thr Ser Ile Glu Glu Ala Ser Lys  
 115 120 125  
 agt atg gag tct acc tta gag tca ctt caa agc ctc agt gcc gcg caa 432  
 Ser Met Glu Ser Thr Leu Glu Ser Leu Gln Ser Leu Ser Ala Ala Gln  
 130 135 140  
 atg aaa gaa gtc gaa gcg gtt gtt gtt gct gcc ctc tca ggg aaa agt 480  
 Met Lys Glu Val Glu Ala Val Val Val Ala Ala Leu Ser Gly Lys Ser  
 145 150 155 160  
 tcg ggt tcc gca aaa ttg gaa aca cct gag ctc ccc aag ccc ggg gtg 528  
 Ser Gly Ser Ala Lys Leu Glu Thr Pro Glu Leu Pro Lys Pro Gly Val  
 165 170 175  
 aca cca aga tca gag gtt atc gaa atc gga ctc gcg ctt gct aaa gca 576  
 Thr Pro Arg Ser Glu Val Ile Glu Ile Gly Leu Ala Leu Ala Lys Ala  
 180 185 190  
 att cag aca ttg gga gaa gcc aca aaa tct gcc tta tct aac tat gca 624  
 Ile Gln Thr Leu Gly Glu Ala Thr Lys Ser Ala Leu Ser Asn Tyr Ala  
 195 200 205  
 agt aca caa gca caa gca gac caa aca aat aaa cta ggt cta gaa aag 672  
 Ser Thr Gln Ala Gln Ala Asp Gln Thr Asn Lys Leu Gly Leu Glu Lys  
 210 215 220  
 caa gcg ata aaa atc gat aaa gaa cga gaa gaa tac caa gag atg aag 720  
 Gln Ala Ile Lys Ile Asp Lys Glu Arg Glu Glu Tyr Gln Glu Met Lys  
 225 230 235 240  
 gct gcc gaa cag aag tct aaa gat ctc gaa gga aca atg gat act gtc 768  
 Ala Ala Glu Gln Lys Ser Lys Asp Leu Glu Gly Thr Met Asp Thr Val  
 245 250 255  
 aat act gtg atg atc gcg gtt tct gtt gcc att aca gtt att tct att 816  
 Asn Thr Val Met Ile Ala Val Ser Val Ala Ile Thr Val Ile Ser Ile  
 260 265 270  
 gtt gct gct att ttt aca tgc gga gct gga ctc gct gga ctc gct gcg 864  
 Val Ala Ala Ile Phe Thr Cys Gly Ala Gly Leu Ala Gly Leu Ala Ala  
 275 280 285  
 gga gct gct gta ggt gca gcg gca gct gga ggt gca gca gga gct gct 912  
 Gly Ala Ala Val Gly Ala Ala Ala Gly Gly Ala Ala Gly Ala Ala  
 290 295 300  
 gcc gca acc acg gta gca aca caa att aca gtt caa gct gtt gtc caa 960  
 Ala Ala Thr Thr Val Ala Thr Gln Ile Thr Val Gln Ala Val Val Gln

0989314-12001  
 T002T-HE6860

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305	310	315	320	
gcg gtg aaa caa gct gtt atc aca gct gtc aga caa gcg atc acc gcg				1008
Ala Val Lys Gln Ala Val Ile Thr Ala Val Arg Gln Ala Ile Thr Ala	325	330	335	
gct ata aaa gcg gct gtc aaa tct gga ata aaa gca ttt atc aaa act				1056
Ala Ile Lys Ala Ala Val Lys Ser Gly Ile Lys Ala Phe Ile Lys Thr	340	345	350	
tta gtc aaa gcg att gcc aaa gcc att tct aaa gga atc tct aag gtt				1104
Leu Val Lys Ala Ile Ala Lys Ala Ile Ser Lys Gly Ile Ser Lys Val	355	360	365	
ttc gct aag gga act caa atg att gcg aag aac ttc ccc aag ctc tcg				1152
Phe Ala Lys Gly Thr Gln Met Ile Ala Lys Asn Phe Pro Lys Leu Ser	370	375	380	
aaa gtc atc tcg tct ctt acc agt aaa tgg gtc acg gtt ggg gtt ggg				1200
Lys Val Ile Ser Ser Leu Thr Ser Lys Trp Val Thr Val Gly Val Gly	385	390	400	
ggt gta gtt gcg gcg cct gct ctc ggt aaa ggg att atg caa atg cag				1248
Val Val Val Ala Ala Pro Ala Leu Gly Lys Gly Ile Met Gln Met Gln	405	410	415	
ctc tcg gag atg caa caa aac gtc gct caa ttt cag aaa gaa gtc gga				1296
Leu Ser Glu Met Gln Gln Asn Val Ala Gln Phe Gln Lys Glu Val Gly	420	425	430	
aaa ctg cag gct gcg gct gat atg att tct atg ttc act caa ttt tgg				1344
Lys Leu Gln Ala Ala Ala Asp Met Ile Ser Met Phe Thr Gln Phe Trp	435	440	445	
caa cag gca agt aaa att gcc tca aaa caa aca ggc gag tct aat gaa				1392
Gln Gln Ala Ser Lys Ile Ala Ser Lys Gln Thr Gly Glu Ser Asn Glu	450	455	460	
atg act caa aaa gct acc aag ctg ggc gct caa atc ctt aaa gcg tat				1440
Met Thr Gln Lys Ala Thr Lys Leu Gly Ala Gln Ile Leu Lys Ala Tyr	465	470	475	480
gcc gca atc agc gga gcc atc gct ggc gca cat aaa acc aat aat ttt				1488
Ala Ala Ile Ser Gly Ala Ile Ala Gly Ala His Lys Thr Asn Asn Phe	485	490	495	
taa				1491

&lt;210&gt; 2

&lt;211&gt; 496

&lt;212&gt; PRT

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&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 2

Asp Thr Asn Met Ser Ile Ser Ser Ser Ser Gly Pro Asp Asn Gln Lys  
 1 5 10 15  
 Asn Ile Met Ser Gln Val Leu Thr Ser Thr Pro Gln Gly Val Pro Gln  
 20 25 30  
 Gln Asp Lys Leu Ser Gly Asn Glu Thr Lys Gln Ile Gln Gln Thr Arg  
 35 40 45  
 Gln Gly Lys Asn Thr Glu Met Glu Ser Asp Ala Thr Ile Ala Gly Ala  
 50 55 60  
 Ser Gly Lys Asp Lys Thr Ser Ser Thr Thr Lys Thr Glu Thr Ala Pro  
 65 70 75 80  
 Gln Gln Gly Val Ala Ala Gly Lys Glu Ser Glu Ser Gln Lys Ala  
 85 90 95  
 Gly Ala Asp Thr Gly Val Ser Gly Ala Ala Thr Thr Ala Ser Asn  
 100 105 110  
 Thr Ala Thr Lys Ile Ala Met Gln Thr Ser Ile Glu Glu Ala Ser Lys  
 115 120 125  
 Ser Met Glu Ser Thr Leu Glu Ser Leu Gln Ser Leu Ser Ala Ala Gln  
 130 135 140  
 Met Lys Glu Val Glu Ala Val Val Val Ala Ala Leu Ser Gly Lys Ser  
 145 150 155 160  
 Ser Gly Ser Ala Lys Leu Glu Thr Pro Glu Leu Pro Lys Pro Gly Val  
 165 170 175  
 Thr Pro Arg Ser Glu Val Ile Glu Ile Gly Leu Ala Leu Ala Lys Ala  
 180 185 190  
 Ile Gln Thr Leu Gly Glu Ala Thr Lys Ser Ala Leu Ser Asn Tyr Ala  
 195 200 205  
 Ser Thr Gln Ala Gln Ala Asp Gln Thr Asn Lys Leu Gly Leu Glu Lys  
 210 215 220  
 Gln Ala Ile Lys Ile Asp Lys Glu Arg Glu Glu Tyr Gln Glu Met Lys  
 225 230 235 240  
 Ala Ala Glu Gln Lys Ser Lys Asp Leu Glu Gly Thr Met Asp Thr Val  
 245 250 255  
 Asn Thr Val Met Ile Ala Val Ser Val Ala Ile Thr Val Ile Ser Ile  
 260 265 270  
 Val Ala Ala Ile Phe Thr Cys Gly Ala Gly Leu Ala Gly Leu Ala Ala  
 275 280 285  
 Gly Ala Ala Val Gly Ala Ala Ala Gly Gly Ala Ala Gly Ala Ala  
 290 295 300  
 Ala Ala Thr Thr Val Ala Thr Gln Ile Thr Val Gln Ala Val Val Gln  
 305 310 315 320  
 Ala Val Lys Gln Ala Val Ile Thr Ala Val Arg Gln Ala Ile Thr Ala  
 325 330 335  
 Ala Ile Lys Ala Ala Val Lys Ser Gly Ile Lys Ala Phe Ile Lys Thr  
 340 345 350  
 Leu Val Lys Ala Ile Ala Lys Ala Ile Ser Lys Gly Ile Ser Lys Val  
 355 360 365  
 Phe Ala Lys Gly Thr Gln Met Ile Ala Lys Asn Phe Pro Lys Leu Ser  
 370 375 380  
 Lys Val Ile Ser Ser Leu Thr Ser Lys Trp Val Thr Val Gly Val Gly  
 385 390 395 400

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Val Val Val Ala Ala Pro Ala Leu Gly Lys Gly Ile Met Gln Met Gln  
 405 410 415  
 Leu Ser Glu Met Gln Gln Asn Val Ala Gln Phe Gln Lys Glu Val Gly  
 420 425 430  
 Lys Leu Gln Ala Ala Ala Asp Met Ile Ser Met Phe Thr Gln Phe Trp  
 435 440 445  
 Gln Gln Ala Ser Lys Ile Ala Ser Lys Gln Thr Gly Glu Ser Asn Glu  
 450 455 460  
 Met Thr Gln Lys Ala Thr Lys Leu Gly Ala Gln Ile Leu Lys Ala Tyr  
 465 470 475 480  
 Ala Ala Ile Ser Gly Ala Ile Ala Gly Ala His Lys Thr Asn Asn Phe  
 485 490 495

&lt;210&gt; 3

&lt;211&gt; 302

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Codon  
 optimised N-terminal section of Chlamydia  
 pneumoniae protein

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (1)..(30)

&lt;223&gt; S-tag and thrombin cleavage site

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (292)..(302)

&lt;223&gt; Histidine tag

&lt;400&gt; 3

Met Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser  
 1 5 10 15

Pro Asp Leu Gly Thr Leu Val Pro Arg Gly Ser Ala Ile Ser Asp Pro  
 20 25 30

Asp Thr Asn Met Ser Ile Ser Ser Ser Gly Pro Asp Asn Gln Lys  
 35 40 45

Asn Ile Met Ser Gln Val Leu Thr Ser Thr Pro Gln Gly Val Pro Gln  
 50 55 60

Gln Asp Lys Leu Ser Gly Asn Glu Thr Lys Gln Ile Gln Gln Thr Arg  
 65 70 75 80

Gln Gly Lys Asn Thr Glu Met Glu Ser Asp Ala Thr Ile Ala Gly Ala  
 85 90 95

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Ser Gly Lys Asp Lys Thr Ser Ser Thr Thr Lys Thr Glu Thr Ala Pro  
 100 105 110  
 Gln Gln Gly Val Ala Ala Gly Lys Glu Ser Ser Glu Ser Gln Lys Ala  
 115 120 125  
 Gly Ala Asp Thr Gly Val Ser Gly Ala Ala Ala Thr Thr Ala Ser Asn  
 130 135 140  
 Thr Ala Thr Lys Ile Ala Met Gln Thr Ser Ile Glu Glu Ala Ser Lys  
 145 150 155 160  
 Ser Met Glu Ser Thr Leu Glu Ser Leu Gln Ser Leu Ser Ala Ala Gln  
 165 170 175  
 Met Lys Glu Val Glu Ala Val Val Val Ala Ala Leu Ser Gly Lys Ser  
 180 185 190  
 Ser Gly Ser Ala Lys Leu Glu Thr Pro Glu Leu Pro Lys Pro Gly Val  
 195 200 205  
 Thr Pro Arg Ser Glu Val Ile Glu Ile Gly Leu Ala Leu Ala Lys Ala  
 210 215 220  
 Ile Gln Thr Leu Gly Glu Ala Thr Lys Ser Ala Leu Ser Asn Tyr Ala  
 225 230 235 240  
 Ser Thr Gln Ala Gln Ala Asp Gln Thr Asn Lys Leu Gly Leu Glu Lys  
 245 250 255  
 Gln Ala Ile Lys Ile Asp Lys Glu Arg Glu Glu Tyr Gln Glu Met Lys  
 260 265 270  
 Ala Ala Glu Gln Lys Ser Lys Asp Leu Glu Gly Thr Met Asp Thr Val  
 275 280 285  
 Asn Thr Val Ala Ala Ala Leu Glu His His His His His His  
 290 295 300

&lt;210&gt; 4

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 4

Ser Ala Lys Leu Glu Thr Pro Glu Leu  
 1 5

&lt;210&gt; 5

&lt;211&gt; 7

&lt;212&gt; PRT

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&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 5

Pro Lys Pro Gly Val Thr Pro

1

5

&lt;210&gt; 6

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 6

Gly Val Thr Pro Arg Ser Glu Val Ile

1

5

&lt;210&gt; 7

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 7

Glu Val Ile Glu Ile Gly

1

5

&lt;210&gt; 8

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 8

Ala Ile Lys Ile Asp Lys Glu Arg

1

5

&lt;210&gt; 9

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 9

Ser Gly Pro Asp Asn Gln

1

5

&lt;210&gt; 10

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 10

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Ser Gly Asn Glu Thr Lys Gln Ile Gln  
1 5

&lt;210&gt; 11

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 11

Ser Glu Gly Gln Lys Ala Gly Ala Asp  
1 5

&lt;210&gt; 12

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 12

Thr Ala Ile Glu Glu Ala Ser Lys Ser  
1 5

&lt;210&gt; 13

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 13

Ser Lys Ser Met Glu Ser Thr Leu Glu  
1 5

&lt;210&gt; 14

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 14

Glu Tyr Gln Glu Met Lys Ala Ala Glu  
1 5

&lt;210&gt; 15

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 15

Glu Lys Gln Ala Ile Lys Ile Asp Lys Glu Arg Glu Glu Tyr  
1 5 10

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&lt;210&gt; 16

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 16

Glu Thr Pro Glu Leu Pro Lys Pro Gly Val Thr Pro Arg Ser  
1 5 10

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